

38. The image processing apparatus according to Claim 36, wherein the input image data includes Red (R), Green (G) and Blue (B) color components, and said first identification circuit adds the first identification data to the B color component.

39. The image processing apparatus according to Claim 38, wherein the color converted image data includes Magenta (M), Cyan (C) and Yellow (Y) color components, and said second identification circuit adds the second identification data to the Y color component, which is the complementary color component of the B color component of the input image data.

40. The image processing apparatus according to claim 39, wherein the first identification data and the second identification data are respectively added to different data locations.

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REMARKS

Claims 1, 3-8, 10-15, 17-19, 21-26, and 28-40 are now presented for examination.

Claims 2, 9, 16, 20 and 27 are canceled without prejudice and without disclaimer of subject matter.

Claims 1, 8, 15, 20 and 26 have been amended to define still more clearly what applicant regards as his invention in terms which distinguish over the art of record.

Claims 30 - 40 have been added to ensure applicant of a more complete scope of protection.

Claims 1, 8, 15, 19, 26, 30 and 36 are the independent claims.

A Request For Approval of Drawing Changes is submitted herewith as required in Paragraph 1 of the Office Action, to add legends 1001 and 1002 to figure 7, as described in the

specification on page 16, lines 7-11. Accordingly, the objection to the drawings is believed obviated, and its withdrawal is respectfully requested.

Claims 1 - 29 were rejected under 35 U.S.C. §103A as being unpatentable over U.S. Patent 5,257,119 (Funada) and U.S. Patent 5,822,660 (Wen).

Amended independent Claim 1 is directed to an image processing apparatus including hiding means which forms second identification information not easily recognizable with eye and different in form from first identification information relating to a copyright and not easily recognizable with eye. The hiding means also sets the second identification information in image data containing the first identification information. The first identification information is formed by a first color signal, and the hiding means comprises color conversion means which performs color conversion of the image data, and forming means which forms the second identification information by a second color different from the first color signal forming the color-converted first identification information in the color-converted image data.

Funada is directed to an image processing apparatus which previously stores information on particular kinds of images, determines the degree of similarity between an input full-color image signal and the information on particular kinds of images, controls conditions for addition of a particular pattern previously stored according to a result of the determination, and outputs an image by adding or not adding the particular pattern to the full-color image signal according to the addition conditions.

The Office Action sites Funada as forming second identification information not easily recognizable with eye (column 8, lines 30-34). This recitation merely states that "the added pattern is formed with yellow toner alone so as to be difficult to discriminate with human eyes. This method is intended to utilize the fact that the discriminating power of human eyes is low with respect to a pattern formed with yellow toner." The Office Action then goes on to state

that the hiding means is also for setting the second identification information in image data containing the first identification information (column 8, lines 56-60). This recitation states "as this added pattern, a manufacturer serial number exclusively assigned to the copying machine or encoded pattern of this number may be formed to enable the machine used to copy a particular kind of original to be identified by examining the copy." Thus, it is seen that the added pattern described at column 8, lines 30-34 and the added pattern described at column 8, lines 56-60 are the same added pattern. That is, the manufacturer's serial number is printed in yellow. It is clear to one skilled in the art that there is not first identification information, and a different second identification information, described at column 8, or anywhere else in Funada. That is, Funada only teaches the use of a single identification information. Further, the Office Action correctly states that Funada does not say anything about copyright information being a pattern. For at least those reasons, Claim 1 is considered patentable over Funada.

Applicant understands Wen as being directed to a copy protection method for identifying copied images that have been captured or generated in electronic form. The method generates information in electronic form for causing the printing of copy restrictive information as a plurality of continuous pixels, of substantially yellow color onto the hard copy. The visibility of the yellow pixels is very low until a cyan illumination is applied to the protected image, then the copy restrictive information becomes highly visible.

Wen is cited in the Office Action as remedying the deficiency of Funada failing to teach that first identification information may be copyright information. Applicant concedes that Wen does, in fact, teach the use of copyright as identification information, and printing the copyright information in yellow so as not to be visible to the human eye. However, Wen suffers from the same deficiency of Funada in that Wen does not teach or suggest using two different identification codes, and printing each code in a different color, or different size on a single

document. The Office Action states that it would have been obvious to modify Funada's apparatus to utilize first identification information relating to copyright as taught by Wen, in addition with second ID information (machine serial number) of Funada to provide more detail on the source material in order to allow the criminal investigator to trace the counterfeiter easily leading to significantly deter and reduce the copyright violations. However, Wen merely teaches the use of a single identification code (copyright) to be printed in a single color (yellow), and Funada also teaches the user of a single identification code (machine serial number) to be printed in a single color (yellow). Funada and Wen may each teach the use of a different identification code, however, each reference merely is directed to the use of a single identification code, printed in a single color (yellow), and there is no motivation in either reference for combining them to use two different identification codes and printing each code in a different color on a single document, as recited in Claim 1. For at least those reasons, Claim 1 is considered patentable over Funada and Wen taken separately or together.

Independent Claims 8, 15, 19 and 26 recite features similar to those recited in Claim 1 and are thought to be patentable for the same reasons.

Newly added independent Claim 30 is directed to an image processing apparatus including an input unit which inputs image data comprised of a plurality of color components, and a first identification circuit for adding first identification data to one of the plurality of color components of the input image data having a first tone. The image processing apparatus also includes a converter which performs color conversion of the input image data including the one of the plurality of color components to which the first identification data has been added, and a second identification circuit for adding second identification data to a color component of the color converted input image data having a second tone which is different from the first tone of the one of the plurality of color components to which the first identification data was added. The

first identification data is discriminable from the second identification data based on a color difference between the first tone and the second tone.

As expressed above with respect to Claim 1 Wen and Funada each failed to teach or suggest using two different identification codes and printing each code in a different color on a single document. Accordingly, neither Funada or Wen teach the use of a first identification circuit and a second identification circuit, with first identification data being discriminable from second identification data based on a color difference between the first tone and the second tone, as recited in Claim 30. For at least those reasons, Claim 30 is considered patentable over Funada and Wen taken alone or in any combination.

Newly added independent Claim 36 is directed to an image processing apparatus including an input unit which inputs image data comprised of a plurality of color components, and a first identification circuit for adding first identification data to one of the plurality of color components of the input image data, and including means for making a size of the first identification data different than a data size of data in other color components of the input image data. The image processing apparatus also includes a converter which performs color conversion of the input image data including the one of the plurality of color components to which the first identification data has been added, and a second identification circuit for adding second identification data to a complimentary color component of the color converted input image data of the one of the plurality of color components to which the first identification data was added with the second identification data having a same size as the data in the other color components of the image data. The first identification data is discriminable from the second identification data based on a size difference between the first identification data and the second identification data.

As discussed above, neither Funada or Wen teaches the use of first identification data and second identification data which is different from the first identification data, and also do not teach or suggest that the first identification data is discriminable from the second identification data based on a size difference between the first identification data and the second identification data. For at least those reasons, Claim 36 is considered patentable over Funada and Wen taken separately or in any combination.

A review of the other art of record has failed to reveal anything which, in applicant's opinion, would remedy the deficiencies of the art discussed above as references against the independent Claims herein. Those Claims are therefore believed patentable over the art of record.

The other Claims in this application are each dependent from one or another of the independent Claims discussed above, and are therefore believed patentable for the same reasons. Since each dependent Claim is also deemed to define an additional aspect of the invention, however, the individual consideration or reconsideration, as the case may be, of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, applicant respectfully requests

favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

  
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Appln. No. 09/239,013  
Attorney Docket No. 35.G2349  
June 20, 2001

APPENDIX

VERSION MARKED TO SHOW CLAIM CHANGES

1. (Amended) An image processing apparatus comprising hiding means for forming second identification information not easily recognizable with eye and different in form from first identification information relating to a copyright and not easily recognizable with eye, said hiding means also for setting the second identification information in image data containing the first identification information,

wherein the first identification information is formed by a first color signal, and said hiding means comprises color conversion means for performing color conversion of the image data, and forming means for forming the second identification information by a second color signal different from the first color signal forming the color-converted first identification information in the color-converted image data.

Cancel claim 2

8. (Amended) An image processing method comprising a setting step including:

forming a second identification information not easily recognizable with



eye and different in form from first identification information relating to a copyright and not easily recognizable with eye; and

setting the second identification information in image data containing the first identification information,

wherein the first identification information is formed by a first color signal, and said setting step comprises performing color conversion of the image data and forming the second identification information by a second color signal different from the first color signal forming the color-converted first identification information in the color-converted image data.

Cancel claim 9

15. (Amended) A computer-readable storage medium comprising a program for a setting process stored therein, the setting process including:

forming second identification information not easily recognizable with eye and different in form from first identification information relating to a copyright and not easily recognizable with eye; and

setting the second identification information in image data containing the first identification information,

wherein the first identification information is formed by a first color signal, and the setting process comprises color conversion processing for performing color conversion of the image data and forming processing for forming the second identification information by a second color signal different from the first color signal forming the color-

converted first identification information in the color-converted image data.

Cancel claim 16

19. (Amended) An image processing apparatus comprising hiding means for forming second identification information not easily recognizable with eye and different in form from first identification information not easily recognizable with eye, said hiding means also for setting the second identification information in image data containing the first identification information,

wherein the first identification information is formed by a first color signal, and said hiding means comprises color conversion means for performing color conversion of the image data, and forming means for forming the second identification information by a second color signal different from the first color signal forming the color-converted first identification information in the color-converted image data.

Cancel claim 20

26. (Amended) A computer-readable storage medium comprising a program for a setting process stored therein, the setting process including:

forming a second identification information not easily recognizable with eye and different in form from first identification information and not easily recognizable with eye; and

setting the second identification information in image data containing the

first identification information,

wherein the first identification information is formed by a first color signal, and the setting process comprises color conversion processing for performing color conversion of the image data and forming processing for forming the second identification information by a second color signal different from the first color signal forming the color-converted first identification information in the color-converted image data.

Cancel claim 27

Please add Claims 30-40 as follows:

--30. An image processing apparatus, comprising:

an input unit for inputting image data comprised of a plurality of color components;

a first identification circuit for adding first identification data to one of the plurality of color components of the input image data having a first tone;

a converter for performing color conversion of the input image data including the one of the plurality of color components to which the first identification data has been added; and

a second identification circuit for adding second identification data to a color component of the color converted input image data having a second tone which is different from the first tone of the one of the plurality of color components to which the first identification data was added,

wherein the first identification data is discriminable from the second identification data based on a color difference between the first tone and the second tone.

color difference between the first tone and the second tone.

31. The image processing apparatus according to Claim 30, wherein the first identification data and the second identification data are respectively added to different data locations.

32. The image processing apparatus according to Claim 30, wherein the input image data includes Red (R), Green (G) and Blue (B) color components, and said first identification circuit adds the first identification data to the R color component.

33. The image processing apparatus according to Claim 32, wherein the color converted image data includes Magenta (M), Cyan (C) and Yellow (Y) color components, and said second identification circuit adds the second identification data to the Y color component.

34. The image processing apparatus according to claim 33, wherein the first identification data and the second identification data are respectively added to different data locations.

35. The image processing apparatus according to Claim 30, wherein said first identification circuit includes means for making a size of the first identification data different than a size of the second identification data,

wherein the first identification data is further discriminable from the second identification data based on a size difference between the first identification data and the second identification data.

36. An image processing apparatus, comprising:

an input unit for inputting image data comprised of a plurality of color components;

a first identification circuit for adding first identification data to one of the plurality of color components of the input image data, and including means for making a size of the first identification data different than a data size of data in other color components of the input image data;

a converter for performing color conversion of the input image data including the one of the plurality of color components to which the first identification data has been added; and

a second identification circuit for adding second identification data to a complementary color component of the color converted input image data of the one of the plurality of color components to which the first identification data was added with the second identification data having a same size as the data in the other color components of the input image data,

wherein the first identification data is discriminable from the second identification data based on a size difference between the first identification data and the second identification data.

37. The image processing apparatus according to Claim 36, wherein the first identification data and the second identification data are respectively added to different data locations.

38. The image processing apparatus according to Claim 36, wherein the input image data includes Red (R), Green (G) and Blue (B) color components, and said first identification circuit adds the first identification data to the B color component.

39. The image processing apparatus according to Claim 38, wherein the color converted image data includes Magenta (M), Cyan (C) and Yellow (Y) color components, and said second identification circuit adds the second identification data to the Y color component, which is the complementary color component of the B color component of the input image data.

40. The image processing apparatus according to claim 39, wherein the first identification data and the second identification data are respectively added to different data locations.--

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